

# Work Order ID 64278

December 1, 2010 12:59:54 PM



Page 1

Item ID: D6102-013

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 12/01/10 Start Qty: 20.00



Cust Item ID:

Required Date: 12/08/10 Req'd Qty: 20.00



Customer:

Reference:

Run Start



Approvals:

Process Plan: CL

Date: 10/12/01 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6102	Rev D								

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 13053 ☐ a) Description: Aluminum Billet ☐ b) 7.000" x 6.500" x 2.000" thick ☐ c) Tolerance on all dimensions is +0.06/0.00 ☐ d) Grain direction along 6.500" length ☐ e) Material: 6061-T6/T6511 (QQ-A-250/11 or QQ-A-200/8) ☐ Material release certifi

CL 10/12/02 (20)

110

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure material certification is attached

CL 10/14/17 (20)

120

QC6- Inspect dimensions to drawing

0.00



QC

Memo

0.00

Quality Control

Check certification to Dwg D6102 for compliance

CL 10/12/20

20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 64278**

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Item ID: D6102-013

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 12/01/10 Start Qty: 20.00



Cust Item ID:

Required Date: 12/08/10 Req'd Qty: 20.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

Identify as per dwg & Stock Location: CNE

0.00

Packaging

Memo

0.00

Packaging

SA 10/12/2020

140



QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control

10/12/20 MEME10-12-20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December 1, 2010 12:59:53 PM

Page 1

Work Order ID: 64278



Parent Item: D6102-013



Parent Item Name: Saddle Billet


Start Date: 12/01/10

Required Date: 12/08/10

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A New Issue 06-07-03 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6102-013P  6061-T6 7.0x6.5x2.0		Purchased	No			110	Each	0.0000	1	20			



*Supp/17* (20)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

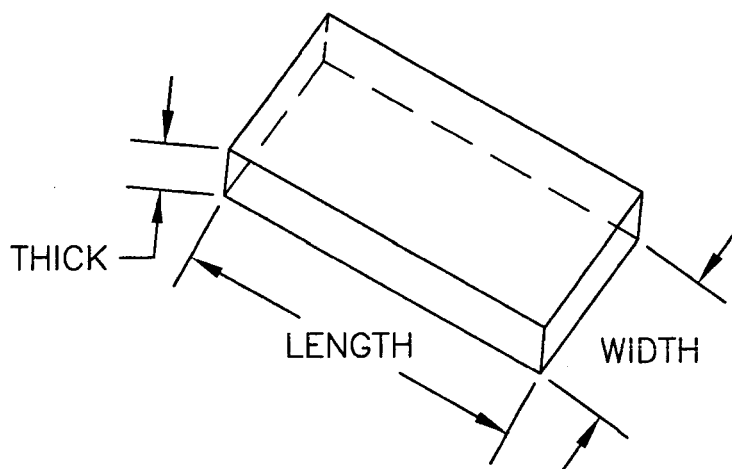
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

DESIGN #	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED CP	APPROVED #	DRAWING NO. D6102	Rev. D SHEET 1 OF 1
DATE 06.06.30		TITLE SADDLE BILLET, 6061	SCALE NTS
A	01.03.30	NEW ISSUE	
B	03.10.20	ADD D6102-005/-007/-009	
C	04.08.25	ADD D6102-010/-011	
D	06.06.30	ADD D6102-013	

## SPECIFICATION CONTROL DRAWING

**RELEASED**

06.08.15 #

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.06/-0.00), AND GRAIN DIRECTION AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.06/-0.00.

ALL DIMENSIONS ARE IN INCHES.

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6102-001	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.880	6.250	2.000	Along 7.880 Length
D6102-003	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.000	6.250	2.000	Along 6.000 Length
D6102-005	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	47.85	15.250	1.000	Along 47.85 Length
D6102-007	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.500	7.000	2.500	Along 7.500 Length
D6102-009	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	11.000	6.000	5.000	Along 11.000 Length
D6102-010	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.950	8.250	2.500	Along 7.950 Length
D6102-011	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	8.250	2.500	Along 6.500 Length
D6102-013	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	7.000	2.000	Along 6.500 Length

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Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO13053

Purchase Order Date 12/02/10

PO Print Date 12/02/10

Page Number 1 of 1

Order From :

VC-MET001

METAUX CASTLE

A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100

TORONTO, ON M4Y 3A5

CA

Contact Name

Vendor Phone

514 694 9575

Vendor Fax

514 695 3281

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

CANADA

**FAKED**  
12/02/10

*e-mail image*

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6102-013P	6061-T6 7.0x6.5x2.0	12/16/10 Yes	✓ 20.00 Each	Yours ppd	\$28.0000	\$560.00

Special Inst:

AS PER DWG D6102 REV. D

B64278

MATERILA: 6061-T6/T6511 (AS PER QQ-A-250/11 OR QQ-A-200/8)

SIZE: 7.000" X 6.500" X 2.000" THICK

GRAIN DIRECTION ALONG 6.500"

LENGTH

TOLERANCE ON ALL DIMENSION ARE  
+0.06/0.00

PO Total:

\$560.00

**MATERIAL CERTIFICATION  
REQ'D UPON DELIVERY**

*u cl*

No substitution or deviation without  
consent.  
Certificate of Conformity or Material  
Certification required when applicable

Change Nbr: 1

Change Date: 12/02/10



**Castle Metals®**

A. M. Castle &amp; Co.

**PACKING SLIP**

Page 1 of 1

Shipment No:609596

<b>Ship From:</b> Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 16-DEC-10	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid		<b>Carrier</b> MANITOULIN		<b>BOL No</b> 609596-2	

<b>Shipment Details</b>	<b>Final Destination Branch - MON</b>
-------------------------	---------------------------------------

<b>Order No</b> 1147341	<b>Line No</b> 1	<b>Item No</b> 8641.MO	<b>Description</b> 2.0000.PL.6061.T651.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 7 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 6.5")) X 6.5 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 6.5")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/11				
<b>Purchase Order No</b> 13053		<b>Part Number</b>		<b>Ordered Qty</b> 20 PCS		<b>Invoice Qty</b> 20 PCS	
<b>Details</b>							
<b>Delivery No.</b>	<b>Mill</b>	<b>Heat Number</b>	<b>Mech Id</b>	<b>PCS</b>	<b>Width (IN)</b>	<b>Length (IN)</b>	<b>Shipped Qty (LBS)</b>
60832306		513882A1		2			18.23
60832306		513882A1		18			164.06

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date:

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4200629

Lot: 513967A0 Cast 785 Drop 25 Ingot 3

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper T651	Dir / # Tests LT / 2 (Min:Max)	Ultimate KSI (MPA) 49.4 : 49.7 (341 : 343)	Yield KSI (MPA) 44.1 : 44.8 (304 : 309)	Elongation % 14.6 : 15.0
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(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.68	0.6	0.28	0.09	1.0	0.18	0.18	0.02	0.01	0.00	TOT 0.05

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
6061 MIN	0.40	0.0	0.15	0.00	0.8	0.04	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

### TEST NOTES

6061 sheet or plate certified to AMS 4025, AMS 4026, or AMS  
4027 also meets applicable requirements of AMS-QQ-A-250/11  
Rev.A.

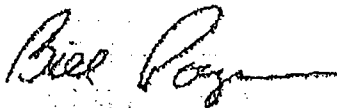
### Castle Metals FP

HEAT NUMBER 513882A1  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 8641  
LOT NUMBER \_\_\_\_\_  
PO NUMBER 101292  
RECEIPT DATE 8-3-2010  
SUPPLIER KAISER  
SPECIFICATION \_\_\_\_\_  
LCS NO  
COMMENT \_\_\_\_\_  
APPROVED OK

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR



## SHIP TO:

A M CASTLE & CO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## SOLD TO:

AM CASTLE & CO- SOLD TO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

## CERTIFIED TEST REPORT

Serial Number

4200629

CUSTOMER PO NUMBER: 61292		WORK PACKAGE:	CUSTOMER PART NUMBER: 8641 AMC A96061-161		SHIP RUN/LOAD: 101848/2	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1100864	LINE ITEM: 2	SHIP DATE: 28-JUL-2010	ALLOY: 6061	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect® Precision Plate
WEIGHT SHIPPED: 11252 LB	QUANTITY: 8 PCS EST.	B/L NUMBER: 2028301	GAUGE: 2.0000 IN		DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN

## Certified Specifications

AMS 4027/RevN

CMMP 025/RevT

ASME SB 209/Rev2004

ASTM B 209/Rev07

Test Code: 1511

## Test Results

Lot: 512535A6 Cast 787

Drop 20

Ingot 3

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	48.9 : 49.6 (337 : 342)	43.6 : 44.9 (301 : 310)	15.0 : 15.1

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.68	0.5	0.35	0.08	1.0	0.20	0.11	0.02	0.01	0.00	TOT 0.06

Lot: 513882A1 Cast 785

Drop 41

Ingot 5

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.4 : 49.7 (341 : 343)	43.9 : 44.0 (303 : 303)	14.9 : 15.3

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.71	0.6	0.29	0.08	1.0	0.19	0.16	0.02	0.01	0.00	TOT 0.05